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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/835,528	04/17/2001	Woo-Jin Lee	11349-P66590US0	5692

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EXAMINER	
SHRADER, LAWRENCE J	

ART UNIT	PAPER NUMBER
2124	4

DATE MAILED: 05/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/835,528	Applicant(s) LEE ET AL.	
	Examiner Lawrence Shrader	Art Unit 2124	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 April 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *#2, 4/17/2001*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. 09/835,528, filed on 4/17/2001.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on 4/17/2001 is acknowledged and being considered by the examiner.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1 – 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Challenger et al., U.S. Patent 6,256,712 (hereinafter referred to as Challenger) in view of Gjovaag, U.S. Patent 5,455,952.

In regard to claim 1:

> *"a user interface means for obtaining object dependency and object usages information from a user;"*

Challenger discloses a means of defining dependency weights of inter-object dependency, but does not explicitly disclose a user interface for obtaining the dependency. However, Gjovaag discloses a graphical interface to display object dependency and usage information (See Abstract). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to combine the means of defining dependency weights of inter-object dependency as taught by Challenger with the graphical interface to display object dependency and usage information as taught by Gjovaag, because the addition of the graphical user interface of Gjovaag adds the benefit of constructing user interactive programs to the object dependency model of Challenger as taught by Gjovaag at column 8, lines 42 – 43).

> *"a means of defining dependency weights for calculating weights of inter-object dependency based on the object dependency and the usages information;"*

Challenger discloses a means of defining dependency weights of inter-object dependency based on the dependency and usage information (column 22, lines 14 – 27).

> "a means of generating an object dependency network for representing degrees of object importance and inter-object dependency by using the dependency weights;"

Challenger discloses a means of generating an object dependency network (See Abstract and directed graph therein) for representing inter-object dependency by using weights (column 6, lines 1 – 34; column 22, lines 14 – 27).

> *"a means of identifying software components for controlling the component identification process by using the object dependency network and the threshold values inputted by a user."*

Challenger discloses threshold weights (column 16, lines 20 – 27).

In regard to claim 2, incorporating the rejection of claim 1:

"...wherein the means of defining dependency weights considers not only the structural object dependency in the object model, but also the accumulated usages information among objects in the sequence diagrams of use cases in consideration of the importance weights of use cases."

Challenger discloses a means of defining dependency weights of inter-object dependency based on the dependency and usage information (column 22, lines 14 – 27).

In regard to claim 3, incorporating the rejection of claim 1:

"...wherein the means of generating the object dependency network represents dependency degrees (DD) among objects, which are calculated by using structural dependency and the object usages information, and the importance degrees (ID) of each objects, which are calculated by summarizing the dependency degrees of connected objects."

Challenger discloses threshold weights which summarize the degrees of dependency to a certain predetermined value (column 16, lines 20 – 27).

In regard to claim 4, incorporating the rejection of claim 1:

"...wherein the means of identifying software components performs a clustering for grouping highly related objects on the object dependency network by considering the degrees of the object importance and the object dependency."

Challenger discloses a means of defining dependency weights of inter-object dependency, but does not explicitly disclose identifying software components performing a clustering for grouping related objects based on the degrees of object importance and dependency. However, Gjovaag discloses a grouping of objects based on given criteria (column 8, lines 56 – 63). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to combine the means of defining dependency weights of inter-object dependency as taught by Challenger with the grouping of related objects as taught by Gjovaag, because grouping of related objects based on dependencies in Gjovaag adds the means to

compute the object dependency model of Challenger as needed by the user in the interactive environment (Gjovaag column 8, lines 56 – 59).

In regard to claim 5 (a method), it is rejected for the same corresponding reasons put forth in the rejection of claim 1 (a corresponding apparatus).

In regard to claim 6, incorporating the rejection of claim 5:

> *"...wherein the step d) includes the steps of:*
>
> > *d1) setting initial conditions of the components for the navigation of an object;*
> > *d2) determining whether there is a component of which an object can be navigated or not;*
> > *d3) if there is the component, determining whether a non-included object of which the dependency value on the component is greater than a predetermined threshold exists in the component or not, if not, terminating the navigation process; and*
> > *d4) if there exists the non-included object in the component, adding the non-included object into the component and going back to the step d2), if not, setting Done[i] to "true", terminating the navigation process and going back to the step d2)."*

Challenger discloses the use of a threshold weight associated with dependencies. If the object is obsolete, it is discarded and the process continues to recursively process all outgoing edges of the object in the dependency graph (column 22, lines 14 – 37)

In regard to claim 7, incorporating the rejection of claim 5:

> *"...wherein the step b) includes the steps of:*
>
> > *b) calculating a weight of each inter-object dependency and calculating a weight of object importance for each object by accumulating the dependency weights of connected objects;*

b1) describing the dependency weights of inter-object dependency and the weights of object importance by positive real values with considering not only the structural object dependency in the object model, but also the accumulated usages information among objects in the sequence diagrams of use cases;
b2) calculating a weight of the object importance for each object based on the dependency weights of inter-object dependency."

Challenger discloses the use of a threshold weight associated with dependencies. If the object is obsolete, it is discarded and the process continues to recursively process all outgoing edges of the object in the dependency graph (column 22, lines 14 – 37)

In regard to claim 8, incorporating the rejection of claim 5:

"...wherein the step d) includes the step of performing a clustering for grouping highly related objects on the object dependency network by considering the degrees of the object importance and the object dependency."

Challenger discloses a means of defining dependency weights of inter-object dependency, but does not explicitly disclose identifying software components performing a clustering for grouping related objects based on the degrees of object importance and dependency. However, Gjovaag discloses a grouping of objects based on given criteria (column 8, lines 56 – 63). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to combine the means of defining dependency weights of inter-object dependency as taught by Challenger with the grouping of related objects as taught by Gjovaag, because grouping of related objects based on dependencies in Gjovaag adds the means to compute the object dependency model of Challenger as needed by the user in the interactive environment (Gjovaag column 8, lines 56 – 59).

In regard to claim 9 (a computer readable recording medium), it is rejected for the same corresponding reasons put forth in the rejection of claim 1 (a corresponding apparatus).

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lawrence Shrader whose telephone number is (703) 305-8046. The examiner can normally be reached on M-F 08:00-16:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki can be reached on (703) 305-9662. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lawrence Shrader
Examiner
Art Unit 2124

30 April 2004

TODD INGBERG
PRIMARY EXAMINER